

### REMARKS

In view of the following remarks, the Examiner is requested to withdraw the rejections and allow Claims 17-34, as well as newly presented Claim 35, the only claims pending and currently under examination in this application.

### FORMAL MATTERS

Claims 17-34 have been rejected.

Claims 24 and 32 have been amended to specify that the number of different dispensers is at least 10 different dispensers. Support may be found in original claims 24 and 32 as well as p. 4, lines 10-11 of the instant specification.

Claim 30 has been amended to correct a typographical error.

New Claim 35 finds support at page 10, line 23, among other locations.

As the above amendments enter no new matter to the application, their entry is respectfully requested.

### Rejection under 35 U.S.C. § 112, Second Paragraph

Claims 24 and 32 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. In view of the above amendments, this rejection may be withdrawn.

### Rejection under 35 U.S.C. § 102

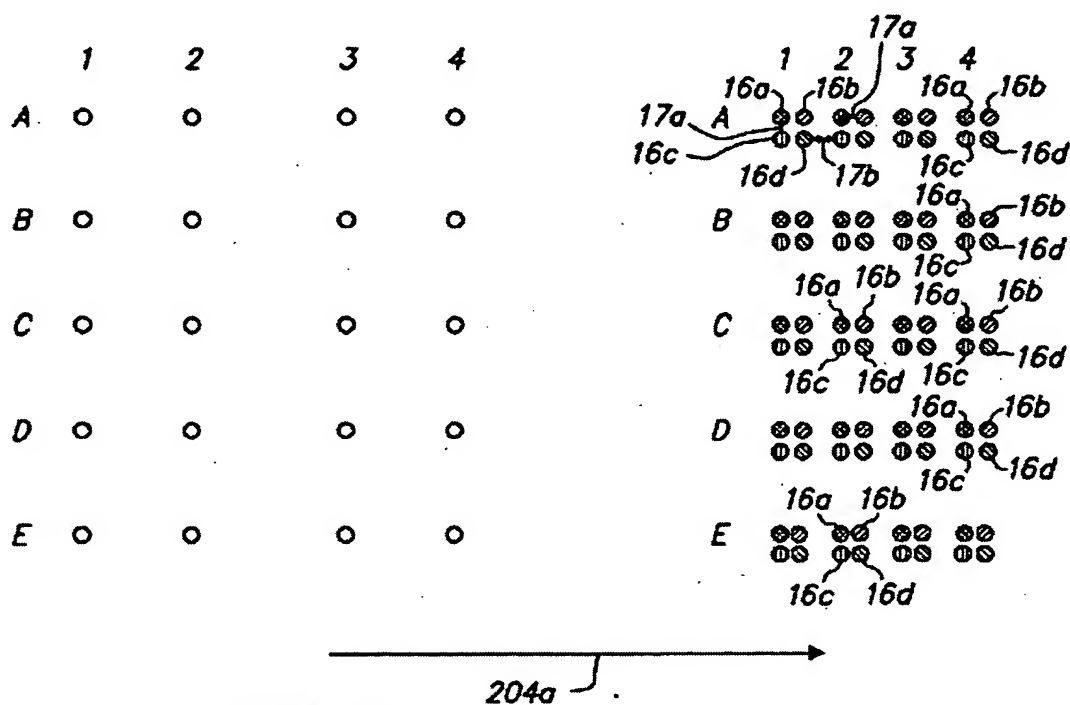
Claims 17, 18, 20-23, 25, 26, 28, 29-31 and 33-34 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Gamble et al. (U.S. Patent No. 6,001,309).

According to MPEP § 2131, a claim is anticipated by a reference only if the ***reference teaches each and every element of the claim.***

The present invention is drawn to array fabrication. The claims specify that at least one set of drops from a corresponding same dispenser are deposited onto a

substrate for each of multiple sets of neighboring features, so as to form the array with the feature sets formed from drops deposited by respective different dispensers. In other words, the array is made up of different sets of features with each feature within a set considered to be "neighboring" and deposited by a corresponding same dispenser.

An example of the an embodiment of the claims methods is depicted in Figure 4 and described at page 9, lines 11 ff. Figure 4 of the instant specification depicts a top view of the dispensers to the left and the deposited neighboring features on the right.



**FIG. 4**

According to the disclosure, all twenty dispensers (top, left) are first loaded with different moieties. During a first pass over the substrate, each of the dispensers deposits at least one drop for a corresponding feature 16a. As such, dispenser A1 deposits drops for feature 16a as shown in region A1 of the substrate above (top, right). During the first pass, dispenser A2 will deposit drops for feature 16a in region

A2, and so forth with dispenser E4 depositing drops for feature 16a in region E4 of the substrate.

The dispensers are then reloaded with another twenty moieties (which may be the same or different) and passed again so that each of the dispensers deposits at least one drop for a corresponding feature 16b. In the above embodiment, the procedure is repeated two more times so that drops have been deposited at all four features 16a, 16b, 16c, and 16d with each feature considered to be neighboring. In other words, in region A1 of the substrate above (top, right) 16a, 16b, 16c, and 16d were all deposited by the same dispenser (A1), which is entirely different from region A2 of the substrate where 16a, 16b, 16c, and 16d were all deposited by dispenser A2.

In contrast, Gamble merely teaches that a particular jet may deposit a drop onto a substrate at various pre-determined locations. Specifically, Gamble discloses a device with several dispensers each loaded with a different reagent with each dispenser depositing its specific reagent onto various locations on the substrate. According to Gamble's disclosure:

During operation, each jetting device in turn may provide for a plurality of spots of the same reagent at different sites on the substrate, so that each portion of the substrate has the same reagent at comparable places at each array (col. 10, lines 5).

As such, this method provides for several arrays to be produced with each array having identical features. For example, a dispenser may deposit a reagent X at position 1 on a first array and the same dispenser will also deposit reagent X at position 1 of a second array. However, nowhere does Gamble teach or suggest one jet depositing "neighboring" drops onto a substrate, let alone multiple sets of neighboring features as in the present invention.

Therefore, Gamble fails to anticipate the present invention because the reference fails to teach the element in which a single dispenser deposits multiple sets of "neighboring" features onto a substrate. Accordingly, this rejection may be

withdrawn.

Claims 17, 18, 21, 26, 29, 30 and 34 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Baldeschwieler et al. (U.S. Patent No. 5,847,105).

Baldeschwieler discloses a method for performing sequential reactions on a plurality of sites on a matrix. According to Baldeschwieler's disclosure:

By employing a multiple jet device the synthesis of complete arrays of oligonucleotides can proceed four times faster...The simplest design to accomplish this is a five jet system, one jet each for the four phosphoramidite reagents and one jet for the activating tetrazole solution. Tetrazole is first applied to the substrate. At each address an additional offset motion is applied to bring the correct phosphoramidite jet in line (col. 6, lines, 52-66).

As such, Baldeschwieler teaches a method of synthesizing oligonucleotides onto an array matrix wherein different reagents are dispensed from different dispensers onto a substrate. Each different reagent may be deposited onto the substrate or stacked on top of another reagent already deposited onto the substrate.

Therefore, similar to Gamble above, the reference teaches the deposition of drops onto a substrate at various pre-determined locations. However, nowhere throughout the disclosure does Baldeschwieler teach a single jet depositing "neighboring" drops onto a substrate, let alone multiple sets of neighboring features **formed from drops deposited by respective different dispensers** as in the present invention.

As such, Baldeschwieler fails to teach each and every element of the present invention. In view of the foregoing discussion, this rejection may be withdrawn.

**Rejection under 35 U.S.C. § 103**

In the Office Action, Claims 17-19, 20-23, 25, 26, 28, 29-31 and 33-34 have been rejected under 35 U.S.C. § 103(a) as being obvious over Gamble et al. (U.S.

Patent No. 6,001,309) in view of Suovaniemi et al. (U.S. Patent No. 4,215,092).

With respect to rejections made under 35 U.S.C. § 103, MPEP § 2142 states:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. **Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir.1991). [emphasis added]

As discussed above, Gamble fails to teach or suggest the element in which a single dispenser deposits multiple sets of "neighboring" features onto a substrate.

As Suovaniemi was cited merely for teaching a multi-channel pipette, the reference fails to make up for the deficiency of Gamble. Accordingly, this rejection may be withdrawn.

In the Office Action, Claim 27 has been rejected under 35 U.S.C. § 103(a) as being obvious over Gamble et al. (U.S. Patent No. 6,001,309) in view of Suovaniemi et al. (U.S. Patent No. 4,215,092) as applied to Claims 17-19, 20-23, 25, 26, 28, 29-31 and 33-34 above and further in view of Quinn et al. (U.S. Patent No. 4,685,998).

As discussed above, the combined teaching of Gamble et al. in view of Suovaniemi fails to disclose or suggest the element of a single dispenser depositing multiple sets of "neighboring" features onto a substrate.

As Quinn was cited merely for teaching a cutter under computer control, the reference fails to make up for the deficiency of Gamble and Suovaniemi. Accordingly, this rejection may be withdrawn.

**Double Patenting**

Claims 17-34 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 20-35 of U.S. Patent Application No. 10/649,105. In view of the above enclosed Terminal Disclaimer, this rejection may be withdrawn.

**Conclusion**

The Applicant submits that all of the claims are in condition for allowance, which action is requested. If the Examiner finds that a telephone conference would expedite the prosecution of this application, please telephone John Brady at 408-553-3584.

The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extensions of time, or credit any overpayment to Deposit Account No. 50-1078.

Respectfully submitted,

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BEF/djm  
Enclosure:

- Terminal Disclaimer over U.S. Patent Application No. 10/649,105.

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